

ABSTRACT

A method and apparatus are disclosed for transferring multi-source/multi-sink control signals using a differential signaling technique. An "active" state is transferred on a multi-source/multi-sink control signal network by inverting the previous voltage level, and an "inactive state" is transferred by maintaining the previous level. A change in the voltage level associated with a given control signal indicates that at least one node on an SoC device is asserting the corresponding control signal. In order to detect a change in the signal state from a previous cycle, each node includes a memory element, such as a latch, for maintaining the previous state. In this manner, a voltage level from the next interval can be compared to the recorded state to detect a change of state indicating an assertion of the control signal by another node. Thus, a given control signal is asserted whenever the state of the signal at the end of the previous cycle is different from the state of the signal at the end of the proceeding cycle. In one exemplary implementation, the asserted control signal is applied to an exclusive-OR gate together with the current value on the control signal wire to thereby cause a transition indicating an assertion of the control signal.

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